

WHAT IS CLAIMED IS:

- 1 1. A method for processing operations in a system including a bus, a
2 target device and devices capable of accessing the target device over the bus, wherein
3 the target device performs:
4 receiving a transaction request from one of the devices over the bus;
5 determining whether a delayed read request is pending after receiving the
6 transaction request;
7 issuing a command to disconnect the device initiating the transaction request
8 from the bus; and
9 allowing the device initiating the transaction request to reconnect to the bus
10 and complete the transaction request after the delayed read request is completed.
- 1 2. The method of claim 1, wherein the delayed read request is directed
2 toward a first memory region and the transaction request comprises an Input/Output
3 request directed toward a second memory region.
- 1 3. The method of claim 1, wherein the first and second memory regions
2 are implemented within the target device.
- 1 4. The method of claim 1, wherein the command to disconnect comprises
2 a retry disconnect that occurs before data subject to the transaction request is
3 transmitted.
- 1 5. The method of claim 1, further comprising:
2 determining whether requested data for the delayed read request is available
3 to return, wherein the command to disconnect the device initiating the transaction
4 request is issued after the requested data for the delayed read request is determined to
5 be available to return.

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1 6. The method of claim 5, further comprising:
2 allowing the transaction request to proceed if the delayed read request is
3 pending and if the requested data for the delayed read request is not available to
4 return.

1 7. The method of claim 6, further comprising:
2 after allowing the transaction request to proceed, determining that all the
3 requested data is available to return, wherein the command to disconnect is issued
4 after determining that all the requested data is available to return after allowing the
5 transaction request to proceed.

1 8. The method of claim 7, wherein the transaction request will attempt to
2 reconnect to the target device to complete an unfinished portion of the transaction
3 request that did not complete as a result of the issuing of the command to disconnect.

1 9. The method of claim 8, wherein the transaction request comprises a
2 write request, wherein the target device receives write data while the delayed read
3 request is pending and the requested data is not available to return, wherein the
4 device issuing the write request will transmit that portion of the write data not sent as
5 a result of the issuing of the command to disconnect during a subsequent reconnect to
6 the target device.

1 10. The method of claim 1, wherein the bus, target device, and devices
2 communicate using the Peripheral Component Interconnect (PCI) protocol, and
3 wherein the devices that initiate the delayed read request and transaction request
4 comprise master devices for the bus.

1 11. The method of claim 1, further comprising;
2 determining whether a variable indicates a first state or a second state,
3 wherein the state indicated by the variable determines when the target device issues

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4 the command to disconnect the device initiating the transaction request while the
5 delayed read request is pending.

1 12. The method of claim 11, further comprising:
2 issuing the command to disconnect the device initiating the transaction
3 request when the device that initiated the delayed read request attempts to reconnect
4 to the target device if the variable indicates the first state; and
5 issuing the command to disconnect the device initiating the transaction
6 request after all the requested data for the delayed read request is determined to be
7 available to return if the variable indicates the second state.

1 13. The method of claim 12, further comprising:
2 allowing the transaction request to proceed during a time at which all the
3 requested data for the delayed read request is not available to return if the variable
4 indicates the second state.

1 14. The method of claim 1, wherein transaction request and delayed read
2 request are initiated from different devices.

1 15. A system for processing operations in communication with devices,
2 comprising:
3 a target device;
4 a bus, wherein the devices are capable of accessing the target device over the
5 bus;
6 means for receiving a transaction request from one of the devices over the
7 bus;
8 means for determining whether a delayed read request is pending after
9 receiving the transaction request;
10 means for issuing a command to disconnect the device initiating the
11 transaction request from the bus; and

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12 means for allowing the device initiating the transaction request to reconnect to
13 the bus and complete the transaction request after the delayed read request is
14 completed.

1 16. The system of claim 15, further comprising:
2 a first memory region; and
3 a second memory region, wherein the delayed read request is directed toward
4 the first memory region and the transaction request comprises an Input/Output
5 request directed toward the second memory region.

1 17. The system of claim 15, further comprising:
2 means for determining whether requested data for the delayed read request is
3 available to return, wherein the command to disconnect the device initiating the
4 transaction request is issued after the requested data for the delayed read request is
5 determined to be available to return.

1 18. The system of claim 17, further comprising:
2 means for allowing the transaction request to proceed if the delayed read
3 request is pending and if the requested data for the delayed read request is not
4 available to return.

1 19. The system of claim 18, further comprising:
2 means for determining that all the requested data is available to return after
3 allowing the transaction request to proceed, wherein the command to disconnect is
4 issued after determining that all the requested data is available to return after allowing
5 the transaction request to proceed.

1 20. The system of claim 19, wherein the transaction request will attempt to
2 reconnect to the target device to complete an unfinished portion of the transaction
3 request that did not complete as a result of the issuing of the command to disconnect.

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1 21. The system of claim 15, wherein the bus, target device, and devices
2 communicate using the Peripheral Component Interconnect (PCI) protocol.

1 22. The system of claim 15, further comprising;
2 means for determining whether a variable indicates a first state or a second
3 state, wherein the state indicated by the variable determines when the target device
4 issues the command to disconnect the device initiating the transaction request while
5 the delayed read request is pending.

1 23. An article of manufacture including code for processing operations in
2 a system including a bus, a target device and devices capable of accessing the target
3 device over the bus, wherein the code causes the target device to perform:
4 receiving a transaction request from one of the devices over the bus;
5 determining whether a delayed read request is pending after receiving the
6 transaction request;
7 issuing a command to disconnect the device initiating the transaction request
8 from the bus; and
9 allowing the device initiating the transaction request to reconnect to the bus
10 and complete the transaction request after the delayed read request is completed.

1 24. The article of manufacture of claim 23, wherein the delayed read
2 request is directed toward a first memory region and the transaction request
3 comprises an Input/Output request directed toward a second memory region.

1 25. The article of manufacture of claim 23, wherein the first and second
2 memory regions are implemented within the target device.

1 26. The article of manufacture of claim 23, wherein the command to
2 disconnect comprises a retry disconnect that occurs before data subject to the
3 transaction request is transmitted.

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1 27. The article of manufacture of claim 23, further comprising:
2 determining whether requested data for the delayed read request is available
3 to return, wherein the command to disconnect the device initiating the transaction
4 request is issued after the requested data for the delayed read request is determined to
5 be available to return.

1 28. The article of manufacture of claim 27, further comprising:
2 allowing the transaction request to proceed if the delayed read request is
3 pending and if the requested data for the delayed read request is not available to
4 return.

1 29. The article of manufacture of claim 28, further comprising:
2 after allowing the transaction request to proceed, determining that all the
3 requested data is available to return, wherein the command to disconnect is issued
4 after determining that all the requested data is available to return after allowing the
5 transaction request to proceed.

1 30. The article of manufacture of claim 29, wherein the transaction request
2 will attempt to reconnect to the target device to complete an unfinished portion of the
3 transaction request that did not complete as a result of the issuing of the command to
4 disconnect.

1 31. The article of manufacture of claim 30, wherein the transaction request
2 comprises a write request, wherein the target device receives write data while the
3 delayed read request is pending and the requested data is not available to return,
4 wherein the device issuing the write request will transmit that portion of the write
5 data not sent as a result of the issuing of the command to disconnect during a
6 subsequent reconnect to the target device.

1 32. The article of manufacture of claim 23, wherein the bus, target device,
2 and devices communicate using the Peripheral Component Interconnect (PCI)

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3 protocol, and wherein the devices that initiate the delayed read request and
4 transaction request comprise master devices for the bus.

1 33. The article of manufacture of claim 23, further comprising;
2 determining whether a variable indicates a first state or a second state,
3 wherein the state indicated by the variable determines when the target device issues
4 the command to disconnect the device initiating the transaction request while the
5 delayed read request is pending.

1 34. The article of manufacture of claim 33, further comprising:
2 issuing the command to disconnect the device initiating the transaction
3 request when the device that initiated the delayed read request attempts to reconnect
4 to the target device if the variable indicates the first state; and
5 issuing the command to disconnect the device initiating the transaction
6 request after all the requested data for the delayed read request is determined to be
7 available to return if the variable indicates the second state.

1 35. The article of manufacture of claim 34, further comprising:
2 allowing the transaction request to proceed during a time at which all the
3 requested data for the delayed read request is not available to return if the variable
4 indicates the second state.

1 36. The article of manufacture of claim 23, wherein transaction request
2 and delayed read request are initiated from different devices.

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